## REMARKS

In response to the Office Action, dated October 5, 2004, Applicants respectfully request reconsideration of objections set forth by the Examiner under 35 U.S.C. § 112. Applicants have amended the claims to more distinctly define the invention. Consequently, Applicants request that these objections be withdrawn.

Additionally, Applicants respectfully request reconsideration of the prior art rejections set forth by the Examiner under 35 U.S.C. §§ 102 & 103. Applicants submit that the references of record whether considered alone or in combination fail to either teach or suggest Applicants' presently claimed invention.

Applicants have modified all the independent claims to specify that the memory analyzer analyzes the set-top box (STB) to determine the types and sizes of memories which are available and then stores texture maps into appropriate available memory.

In accordance with the present invention, If the total size of the set of texture maps is greater than the on-chip memory size, the present invention advantageously divides the set of texture maps into two groups where the first group is the largest possible sum of texture map sizes for which the total size of the sum of texture maps is less than the preferred first memory size and the second group is the difference between the total size of all texture maps and the first group.

The present invention is distinct from conventional systems which simply provide memory allocation and storage schemes. There is simply no teaching or suggestion whatsoever concerning the ability to determine the types of memories available, divide a set

of texture maps and then preferentially store the texture maps according to the types of found memories and memory sizes.

Wishoff et al., U.S. Patent No. 6,144,376, is directed to a system such as, for example, a STB that comprises a memory manager including an efficient allocation scheme to improve performance with limited memory resources. Col. 2, lines 59-60. A memory manager enables sharing of relocatable or purgeable memory. Col. 2, lines 63-65. More specifically, Wishoff et al. discloses that a graphics application utilizes a two heap system wherein the first heap, the system memory heap, is used by a central processing unit (CPU) and the second heap, video memory heap, is used by a graphics application and graphics processor. Col. 3, lines 21-25 & Col. 6, lines 55-58. The graphics application specifies the heap from which to allocate memory as well as the size of memory needed. Col. 3, lines 33-36. The video memory allocator returns a handle to the newly allocated memory, initializes the memory to zeros, and provides the heap, size and validity of handle information. Col. 3, lines 36-46. Wishoff et al. provides that the memory is reallocated such that the memory handle does not move but only the data associated with the handle moves. Col. 4, lines 13-25.

Wishoff et al. discloses that memory may be allocated according to the 1st fit scheme or the best fit scheme. In the 1st fit scheme, the memory manager traverses list of free memory and chooses a 1st piece that satisfies the allocation request. Col. 6, lines 11-14. In the best fit scheme, the memory manager the entire list of free memory to find the memory closest to the size of allocation request. Col. 6, lines 14-17. If there is insufficient memory, the system first reallocates memory by "shifting" graphic memory portions, then reallocates memory using handles if memory is still insufficient, purges handles starting with those marked purgeable and with the lowest purge priorities, and finally unlocks frame buffer and

requests all applications to free up any video memory. Col. 6, lines 25-53. Wishoff et al. simply does not disclose a STB that first checks for memory types to find a preferred type of memory. Moreover, Wishoff et al. simply does not disclose dividing a set of texture maps into two groups where the total size of the texture maps in a first group is the largest possible sum of texture map sizes for which the total size of texture maps is less than the preferred first memory size and the total size of a second group is the difference between the total size of the set of texture maps and the total size of the first group.

Leftwich, Publication No. 2003/0037336, is directed to TV systems which utilize filters to select and screen available and/or accessible programming in an electronic program guide (EPG). Pg. 2, ¶ 0028. Leftwich provides that a filter is simply a mechanism for selecting programs based on a selection criterion. Pg. 2, ¶ 0028. The filters may be a system filer, filter provided by a service provider, or a third party filter. Pg. 2, ¶ 0042. Leftwich discloses that only selected filters are applied to the programming and that such filters may be prioritized. Pg. 3, ¶ 0043. Leftwich neither teaches nor suggests a STB which determines whether a type of memory exists and then distributes and saves texture maps based on the types of memory found.

In addition, Kenworthy, U.S. Patent No. 5,852,443, is directed to systems and method which subdivide an image to create regions and sub regions during rasterization or other graphics rendering operations to provide high quality images or real-time performance while employing only a minimal amount of expensive, special purpose memory. Col. 4, lines 15-36. Kenworthy discloses that the system determined objects and viewpoint locations, determines configurations of gsprites for a scene or image, divides the gsprites into pixel

regions called chunks and presorts geometry into bins based on which chunk the geometry will be rendered into. Col. 8, lines 33-40 & Col. 13, lines 21-34; lines 42-55.

Kenworthy explains that all geometry in one chunk is rendered before proceeding to a next chunk thereby requiring a depth buffer to be only as large as a single chunk so that the system can use a small chunk and a small buffer implemented on a chip. Col. 8, lines 45-56. Moreover, the system can easily perform operations such as anti-aliasing and transparency processing on a single, small chunk while another chunk is being built. Col. 9, lines 1-8. Kenworthy provides that the system reduces bandwidth requirement and allows the use of a single shared memory system for all memory requirements including compressed texture storage and compressed gsprite storage. Col. 9, lines 35-39. Although Kenworthy discloses that texture maps maybe compressed, it simply does not disclose a set-top box which determines what types of memories it comprises and thereafter distributes and stores texture maps according to the types and sizes of memories present within the STB.

Behrbaum et al., U.S. Patent No. 6,326,973, is directed to a memory manager for systems having highly parallel system architectures, multiple processing units, multiple core logic chipsets, and polled system memory provided with one or more accelerated graphics port (AGP). See generally Abstract. Behrbaum et al. discloses the ability to dynamically allocate memory for AGP devices by utilizing an advanced configuration and power interface (ACPI) control method. Col. 6, lines 20-31. More specifically, a new ACPI table called the memory bank address table (MBAT) is dynamically created which allows AGP drivers to use the MBAT to allocate new memory. Col. 6, lines 39-48. A memory manager attempts to allocate local memory within a specified range and when such memory cannot be allocated, the drivers allocate memory from outside the specified range. Col. 6, lines 51-57. Although,

Behrbaum et al. suggests attempting to distribute data to a memory within a specified range, it simply does not teach or suggest searching for types of memories within a STB and dividing the memory according to the formula set forth in the present invention. It merely discloses allocating as much local memory as possible before allocating memory outside of the specified range.

Hicok et al., U.S. Patent No. 6,266,753, is directed to system and methods which utilize a virtual memory manager for a multi-media engine. Col. 3, lines 60-61. Specifically, Hicok et al. discloses a second virtual memory controller that is unique to the media system. Col. 3, lines 61-64. The second virtual memory controller allows individual media units to operate in their own virtual space by performing address translation or mapping to correct physical memory location and converting data stream to and from a compressed format. Col. 4, lines 1-3. However, Hicok et al., neither alone nor in combination, teaches or suggests checking for memory types to find a preferred type of memory and dividing a set of texture maps into two groups where the total size of the texture maps in a first group is the largest possible sum of texture map sizes for which the total size of texture maps is less than the preferred first memory size and the total size of a second group is the difference between the total size of the set of texture maps and the total size of the first group.

The references of record fail to teach or suggest these advances in the art. Applicants respectfully submits that all claims now stand in condition for allowance.



Respectfully submitted,

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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail on April 5, 2005 in an envelope addressed to:



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